CLAIMS

What is claimed:

1. A method of constructing a microelectronic assembly, comprising:

locating a mold piece over a microelectronic die carrying an integrated circuit;

injecting an encapsulant mixture into a space defined between surfaces of the mold piece and the microelectronic die, the encapsulant mixture including a liquid phase epoxy and a solid phase catalyst compound when injected; and

heating the encapsulant mixture in the space to a temperature where the catalyst compound becomes a liquid and cures the epoxy.

2. The method of claim 1 wherein the catalyst compound includes a polymer and a catalyst bound to the polymer.

3. The method of claim 2 wherein the polymer is polystyrene.

4. The method of claim 2 wherein the catalyst is diphenyl phosphine.

5. The method of claim 1 wherein the catalyst compound includes a catalyst which is less active than triphenyl phosphine of the same mass fraction at 120 degrees C.

6. The method of claim 5 wherein the catalyst is approximately as active as triphenyl phosphine of the same mass fraction at 160 degrees C.

7. The method of claim 1 wherein the epoxy includes at least one of bis(4-glycidyloxyphenyl)methane (Tm = -15oC), poly[(o-cresyl glycidl ether)-co-formaldehyde]

(Tm = 37oC), 4,4'-isopropylidenediphenol diglycidyl ether (Tm = 40oC), 3,5,3',5'-tetramethyldiphenyl 4,4'-diglycidyl ether (Tm = 90oC).

8. The method of claim 1 wherein the epoxy is a liquid at 22 degrees C.

9. The method of claim 8 wherein the epoxy is a liquid at 30 degrees C.

10. The method of claim 8 wherein the epoxy includes bis(4-glycidyloxyphenyl)methane (Tm = -15oC).

11. The method of claim 1, further comprising removing the epoxy from the mold piece after the epoxy is cured.

12. A method of constructing a microelectronic assembly, comprising:

locating a mold piece over a microelectronic die carrying an integrated circuit;

injecting an encapsulant mixture into a space defined between surfaces of the mold piece and the microelectronic die, the encapsulant mixture including a liquid phase epoxy and a solid phase polystyrene-bound diphenyl phosphine catalyst compound; and

heating the encapsulant mixture in the space to above a glass transition temperature of the polystyrene so that the diphenyl phosphine cures the epoxy.

13. The method of claim 12 wherein the epoxy is a liquid at 22 degrees C.

14. The method of claim 13 wherein the epoxy includes bis(4-glycidyloxyphenyl)methane (Tm = -15oC).

15. An encapsulant mixture comprising:

an epoxy in liquid phase at 22 degrees C; and

a catalyst compound in solid phase at 22 degrees C, heating of the catalyst compound causing curing of the epoxy.

16. The encapsulant mixture of claim 15 wherein curing of the epoxy requires that the catalyst compound be heated to a temperature where it becomes a liquid.

17. The encapsulant mixture of claim 15 wherein the catalyst compound includes a polymer and a catalyst bound to the polymer.

18. The encapsulant mixture of claim 17 wherein the polymer is polystyrene.

19. The encapsulant mixture of claim 17 wherein the catalyst is diphenyl phosphine.

20. The encapuslant mixture of claim 15 wherein the catalyst compound includes a catalyst which is less active than triphenyl phosphine of the same mass fraction at 120 degrees C.

21. The encapsulant mixture of claim 20 wherein the catalyst is approximately as active as triphenyl phosphine of the same mass fraction at 160 degrees C.

22. The encapsulant mixture of claim 15 wherein the epoxy is liquid at 30 degrees C.

23. The encapsulant mixture of claim 15 wherein the epoxy includes bis(4-glycidyloxyphenyl)methane (Tm = -15oC).